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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,878	04/25/2001	Tomoyuki Imai	1417-348	5510

7590

01/24/2003

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EXAMINER

JOHNSON, EDWARD M

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 01/24/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/840,878

Applicant(s)

IMAI ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-21, 29, 30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21, 29 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16-21, 29, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16-21, and 29 appear to contain use limitations and it is unclear how they limit an iron compound catalyst as claimed because they do not appear to limit the catalyst itself but rather a process for using the catalyst.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-21, 29, and 32 are rejected under 35 U.S.C. 103(a) as unpatentable over Iglesia et al. 5,036,032.

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Regarding claim 16, Iglesia '032 discloses catalyst metals including iron (see column 4, lines 20-21) supported as inorganic refractory oxides (see column 4, lines 38-44) comprising a diameter of 130 Angstroms (see column 9, lines 44-45), a surface area of 50-500 m²/g (see column 4, lines 50-51), and a site density of 0.064 (see Table A), 60-65% CO conversion (see column 10, line 45) and calcining at above 500 degrees at 1 degree per minute for a sufficient period of time (see column 6, lines 54-56). Iglesia does not disclose any presence of phosphorus, sulfur, or sodium (see Example 1).

Iglesia fails to disclose the process limitations 2.8×10^{-4} mol of iron oxide particles, heat-treating at 800 degrees, contacting with 6.1×10^{-7} mol of CO at 250 degrees, and a space velocity of 42,400 h⁻¹.

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the catalyst of Iglesia in a process with using any amount of moles to convert any amount of moles of CO to carbon dioxide at any space velocity at any temperature with the reasonable expectation of achieving a favorable result because such process of using limitations do not modify the catalyst product itself and Iglesia discloses a site density of 0.064 (see Table A), 60-65% CO conversion (see column 10, line 45) and calcining at

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above 500 degrees at 1 degree per minute for a sufficient period of time (see column 6, lines 54-56). Units of measurement, methods of taking these measurements, and the use of the catalyst, were not themselves given patentable weight with respect to the instantly claimed product.

Regarding claims 2, 5, 17, and 19-21 Iglesia '032 discloses an iron catalyst (see column 4, lines 19-22) comprising a diameter of 130 Angstroms (see column 9, lines 44-45), a surface area of 50-500 m²/g (see column 4, lines 50-51), and a site density of 0.064 (see Table A). Iglesia discloses no presence of phosphorus, sulfur, or sodium (see Example 1).

Regarding claims 3 and 18, Iglesia '032 discloses 60-65% CO conversion (see column 10, line 45) and calcining at above 500 degrees for 1 degree per minute for a sufficient period of time (see column 6, lines 54-56), and the use of the catalyst was not given patentable weight.

Regarding claim 4, Iglesia '032 discloses catalyst metals including iron (see column 4, lines 20-21) supported as inorganic refractory oxides (see column 4, lines 38-44).

Response to Arguments

5. Applicant's arguments filed 11/29/02 have been fully considered but they are not persuasive.

It is argued that in item 2 of the Official Action, claims 16-21, 29, and 32 are rejected as allegedly being indefinite. This is not persuasive because the use of the catalyst in a process having a space velocity to convert an amount of carbon monoxide does not limit the catalyst product itself, since any conversion catalyst can be used at any space velocity.

It is argued that the "use limitation" urged in item 2 of the Official Action. This is not persuasive because Applicant's fiber forming polymer and protein binding analogies are not process limitations and using a product at a space velocity is.

It is argued that as seen from above, the coated or rim type catalyst of Iglesia et al are supported cobalt catalysts. This is not persuasive because Applicant appears to suggest that a catalyst without a support is instantly claimed. It is noted that the features upon which applicant relies (i.e., a catalyst that is unsupported) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is argued that in addition, the "surface areas range from 50-500 m²/g". This is not persuasive because the catalyst comprises the support, which has the claimed surface area. Since

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the claimed surface area is disclosed as part of the prior art catalyst, the claim is met. Applicant appears to admit that Iglesia discloses a crystallite diameter that anticipates the claimed particle size, since crystallites are particles.

Applicant also appears to admit that Iglesia discloses iron, arguing only that he may not have had "interest" in it, despite the disclosure. However, the amount of interest Iglesia had in iron appears to have little or nothing to do whether iron is disclosed.

It is argued that furthermore, Iglesia et al do not disclose or teach aggregates consisting essentially of iron oxide particles. This is not persuasive because Applicant appears to admit that Iglesia teaches combinations of iron, cobalt, and other metals combined with a support, which is an aggregate of metals and support.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 703-308-3837. The fax phone numbers for the


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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EMJ

January 13, 2003



Robert J. Papp
Senior Patent Examiner
Technology Center